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09/581,990	06/21/2000	Yosi Bar-Erez	1529	8047

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EXAMINER

HAWKINS, CHERYL N

ART UNIT

PAPER NUMBER

1734

DATE MAILED: 10/23/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/581,990

Applicant(s)

BAR-EREZ, YOSI

Examiner

Cheryl N Hawkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-45,51 and 52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-45,51 and 52 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I, claims 26-45, 51, and 52, in Paper No. 8 is acknowledged.

### *Claim Objections*

2. Claim 26 is objected to because of the following informalities: "its opposite sides" in lines 2-3 of the claim should be changed to --one side--. Appropriate correction is required.
3. Claim 26 is objected to because of the following informalities: "sheets" in line 3 of the claim should be changed to --sheet--. Appropriate correction is required.
4. Claim 26 is objected to because of the following informalities: "opposite sides" in line 3 of the claim should be marked --opposite side--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 52 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the selective deployment of a releasing agent by selective application of the releasing agent, does not reasonably provide enablement for selective deployment of the

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releasing agent by selective removal of a coating of the releasing agent. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The specification does not provide any description as to how one would carry out selective deployment of a releasing agent by removing portions of the releasing agent coating.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 26-29, 33, 35, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817) in view of Kinzie (US 6,136,132), Shimazaki (US 5,474,229), and Bampton et al. (US 5,745,834). As to Claims 26 and 51, Feygin et al. discloses a method of making a three-dimensional object (Figure 2) constituted of a plurality of thin preformed sheets (Figure 1, layers 56) each bonded on one side to the next adjacent sheet on its opposite side, with each sheet cut along a contour (Figure 2, contour line) corresponding to the contour of the respective layer constituted by the sheet in the object, the method comprising bonding one side of a sheet to the opposite side of an adjacent sheet such that the remaining portion of the sheet not within the contour is readily separable from the three-dimensional object (Figure 2, cross hatching 82; column 5, lines 55-67; column 6, lines 1-2). Feygin et al. does not disclose the selective deployment of a releasing agent on one side of the sheet. One of ordinary skill in the

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art at the time of the invention would recognize the advantage of preventing the waste material from undesirably adhering to the sheets forming the three-dimensional object. It is well known and conventional in the laminating art, as disclosed by Kinzie (column 12, lines 4-9), Shimazaki (column 1, lines 43-52), Bampton et al. (column 6, lines 18-24), to use a release coating to prevent undesired adhesion. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Feygin et al. to include selectively coating the top side of each sheet with a releasing agent to prevent undesired adhesion of the portion of the sheet comprising waste material to the portion of the sheet comprising a layer of the three-dimensional object.

As to Claim 27, Feygin et al. discloses a method in which the bottom side of each sheet is covered on its complete surface with an adhesive to promote bonding of all the sheets to form the three-dimensional object (column 8, lines 15-17).

As to Claim 28, Feygin et al. discloses a method in which the adhesive is applied to the under surface of the sheets, but does not disclose applying a releasing agent to the upper surfaces of the sheets. One of ordinary skill in the art at the time of the invention would recognize the advantage of preventing the waste material from undesirably adhering to the sheets forming the three-dimensional object. It is well known and conventional in the laminating art, as disclosed by Kinzie (column 12, lines 4-9), Shimazaki (column 1, lines 43-52), Bampton et al. (column 6, lines 18-24), to use a release coating to prevent undesired adhesion. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Feygin et al. to include selectively coating the top side of each sheet with a releasing agent to prevent

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undesired adhesion of the portion of the sheet comprising waste material to the portion of the sheet comprising a layer of the three-dimensional object.

As to Claim 29, Feygin et al. discloses a method in which the sheets are individually fed to and stacked on a horizontal table which is successively lowered as the sheets are successively stacked thereon (Figure 1, layers 56, stack 58, work table 130; column 7, lines 54-57).

As to Claim 33, Feygin et al. discloses a method in which each sheet is cut along its respective contour by a cutting tool which is driven in two dimension to trace the respected contour while the sheet is stationary (Figure 2, contour line 80, forming tool 46; column 5, lines 51-56).

As to Claim 35, Feygin et al. discloses a method in which each sheet is pre-coated on its lower surface with adhesive (column 8, lines 15-17).

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817), Kinzie (US 6,136,132), Shimazaki (US 5,474,229), and Bampton et al. (US 5,745,834) as applied to claim 29 above, and further in view of Belanger, Jr. (US 4,721,453). Feygin et al. does not disclose coating each sheet on its upper surface outside of its respective contour with a releasing agent as the sheet is fed to the horizontal table to be stacked on top of the other sheets. One of ordinary skill in the art at the time of the invention would recognize the advantage of preventing the waste material from undesirably adhering to the sheets forming the three-dimensional object. It is well known and conventional in the laminating art, as disclosed by Kinzie (column 12, lines 4-9), Shimazaki (column 1, lines 43-52), Bampton et al. (column 6, lines 18-24), to use a release coating to prevent undesired adhesion. Belanger, Jr. discloses an

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apparatus which utilizing a release agent applicator which coats the upper surface of a web being fed through a manufacturing operations (Figure 1, sprayer 36; column 3, lines 18-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Feygin et al. to include selectively applying a releasing agent to the top side of each sheet as the sheet is fed to horizontal table to prevent undesired adhesion of the portion of the sheet comprising waste material to the portion of the sheet comprising a layer of the three-dimensional object .

10. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817), Kinzie (US 6,136,132), Shimazaki (US 5,474,229), Bampton et al. (US 5,745,834), and Belanger, Jr. (US 4,721,453) as applied to claim 30 above, and further in view of Berman (US 5,071,503). Feygin et al. does not disclose applying the releasing agent with a releasing agent applicator controlled to selectively apply the releasing agent while the sheet is moving or being held stationary. Belanger, Jr. discloses an apparatus which utilizing a release agent applicator which coats the upper surface of a web being fed through a manufacturing operations (Figure 1, sprayer 36; column 3, lines 18-24). Berman discloses a applicator device for making three-dimensional objects which selectively coats an upper surface of a stationary web (Figure 1, applicator 24). When modifying the method of Feygin et al. as noted above to include coating the upper surface of each sheet with a releasing agent while being fed to the horizontal table, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a applicator such as that disclosed by Belanger, Jr. to selectively apply the

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releasing agent while the sheet is being moved or to use an applicator such as that disclosed by Berman to selectively apply the releasing agent to stationary sheets.

11. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817), Kinzie (US 6,136,132), Shimazaki (US 5,474,229), Bampton et al. (US 5,745,834), Belanger, Jr. (US 4,721,453), and Berman (US 5,071,503) as applied to claim 31 above, and further in view of Richards et al. (US 6,161,604). Feygin et al. discloses a method in which each sheet is coated on its complete lower surface with adhesive, but does not disclose coating each sheet with adhesive as it is being fed to the horizontal table. Richards et al. discloses a method which includes coating a completed surface of a web material with adhesive as it is being fed for additional manufacturing operations (Figure 2, adhesive applicator 295). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Feygin et al. to include an adhesive applying step such as disclosed by Richards et al. to eliminate the need for using costly web material that is pre-coated with adhesive.

12. Claims 36-41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817), Kinzie (US 6,136,132), Shimazaki (US 5,474,229), Bampton et al. (US 5,745,834), and Belanger, Jr. (US 4,721,453). As to Claims 36, 37, 40, and 41, Feygin et al. discloses an apparatus for making a three-dimensional object (Figure 2) constituted of a plurality of thin preformed sheets (Figure 1, layers 56) each bonded on one side to the next adjacent sheet on its opposite side, with each sheet cut along a contour (Figure 2, contour line) corresponding to the contour of the respective layer constituted by the sheet in the object, the apparatus



comprising bonding one side of a sheet to the opposite side of an adjacent sheet such that the remaining portion of the sheet not within the contour is readily separable from the three-dimensional object (Figure 2, cross hatching 82; column 5, lines 55-67; column 6, lines 1-2). Feygin et al. does not disclose a releasing agent applicator. One of ordinary skill in the art at the time of the invention would recognize the advantage of preventing the waste material from undesirably adhering to the sheets forming the three-dimensional object. It is well known and conventional in the laminating art, as disclosed by Kinzie (column 12, lines 4-9), Shimazaki (column 1, lines 43-52), Bampton et al. (column 6, lines 18-24), to use a release coating to prevent undesired adhesion. Belanger, Jr. discloses an apparatus which utilizing a release agent applicator which coats the upper surface of a moving web being fed through a manufacturing operations (Figure 1, sprayer 36; column 3, lines 18-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Feygin et al. to include a releasing agent applicator for selectively coating the top side of each fed sheet with a releasing agent to prevent undesired adhesion of the portion of the sheet comprising waste material to the portion of the sheet comprising a layer of the three-dimensional object.

As to Claim 38, Feygin et al. discloses an apparatus which includes a horizontal table (Figure 1, work table 130); a feeder for feeding the sheets individually to, and stacking them on, the horizontal table (Figure 1); and a drive for lowering the table as the sheets are successively stacked thereon (Figure 1, elevator mechanism 131).

As to Claim 39, Feygin et al. discloses an apparatus in which the drive (Figure 1, elevator mechanism 131) includes a rotary motor (Figure 1, motor 132) and screws (Figure 1, threaded

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shaft 134) driven by the motor and coupled to the corners of the horizontal table for raising and lower the table (column 7, lines 54-65).

As to Claim 43, Feygin et al. discloses an apparatus in which the cutting tool is driven in two dimension to trace the respective contour of the sheet while the sheet is stationary (Figure 2, contour line 80, forming tool 46; column 5, lines 51-56).

13. Claims 42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817), Kinzie (US 6,136,132), Shimazaki (US 5,474,229), Bampton et al. (US 5,745,834), and Belanger, Jr. (US 4,721,453) as applied to claim 40 above, and further in view of Berman (US 5,071,503). Feygin et al. does not disclose applying the releasing agent with a movable releasing agent applicator controlled to selectively apply the releasing agent while the sheet is being held stationary. Berman discloses a applicator device for making three-dimensional objects which selectively coats an upper surface of a stationary web (Figure 1, applicator 24). When modifying the apparatus of Feygin et al. as noted above to include using a releasing agent applicator to coat the upper surface of each sheet with a releasing agent while being fed to the horizontal table, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an moving applicator such as that disclosed by Berman to selectively apply the releasing agent to stationary sheets.

As to Claim 44, Feygin et al. does not disclose an apparatus in which the releasing agent applicator and the cutting tool are carried by a common head. Berman discloses an apparatus for making three-dimensional objects in which an applicator tool and a cutting tool are carried by a common head which is driven in two dimensions to define the contour of a sheet (Figure 1,

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movable head 22, applicator 24, cutting tool 26; abstract). When modifying the apparatus of Feygin et al. as noted above to include using a releasing agent applicator, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Feygin et al. to place the releasing agent applicator and the cutting tool onto a common head to eliminate the need for two separate tools and their respective means for movement.

14. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817), Kinzie (US 6,136,132), Shimazaki (US 5,474,229), Bampton et al. (US 5,745,834), and Belanger, Jr. (US 4,721,453) as applied to claim 40 above, and further in view of Richards et al. (US 6,161,604). Feygin et al. discloses an apparatus in which each sheet is coated on its complete lower surface with adhesive, but does not disclose an adhesive applicator for coating each sheet with adhesive as it is being fed to the horizontal table. Richards et al. discloses an apparatus which includes coating a completed surface of a web material with adhesive applicator as it is being fed for additional manufacturing operations (Figure 2, adhesive applicator 295). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Feygin et al. to include an adhesive applying step such as disclosed by Richards et al. to eliminate the need for using costly web material that is pre-coated with adhesive.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl N. Hawkins whose telephone number is (703) 306-0941. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

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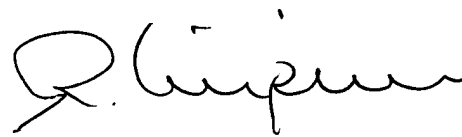
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone numbers for the organization where the application or proceeding is assigned is (703) 872-9310 for regular communications or (703) 872-9311 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0661.

Cheryl N. Hawkins

*Cheryl N. Hawkins 10/21/02*

October 21, 2002



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